

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

COURSE OUTLINE

COURSE TITLE: WORK SHOP PRACTICE I
CODE NO. : ASM112 SEMESTER: 2
PROGRAM: AUTOMOTIVE TECHNICIAN – SERVICE & MANAGEMENT
AUTHOR: STEPHEN KENT
DATE: DECEMBER 99 PREVIOUS OUTLINE DATED: N/A
APPROVED:

DEAN

DATE

TOTAL CREDITS: 2

PREREQUISITE(S): ASM 101

LENGTH OF COURSE:

16 Weeks

TOTAL CREDIT HOURS:

32

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For additional information, please contact Kitty DeRosario, Dean,
School of Technology, Engineering & Technical Trades
(705) 759-2554, Ext.642*

COURSE NAME

COURSE NUMBER

I. COURSE DESCRIPTION:

In this course the student will be introduced to mobile air conditioning systems, including identification of major components and operating principles. It will also outline the basic information and fundamentals of hydraulics and pneumatics systems utilized on motor power vehicles. General concepts of principles of operation of valves, cylinders, reservoirs, schematics and fluids utilized in the hydraulic and pneumatics systems will be discussed. The course will also teach the student a working knowledge required to safely set up and use oxy-acetylene welding equipment for welding, heating & cutting.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Identify the major components and state the operating principles of mobile air conditioning systems.

Potential Elements of the Performance:

- Complete a project which shows how mobile air conditioning systems operate.
- State applicable laws of physics related to air conditioning systems operations.
- Identify air conditioning system major components.
- Compare R12 systems to R134a systems.
- Explain 4 methods of refrigerant leak detection.

2. Explain the fundamentals and basic operating principles of hydraulic and pneumatic systems utilized in motive power vehicles.

Potential Elements of the Performance:

- Compare & contrast hydraulic versus pneumatic.
- Draw, read and interpret hydraulic and pneumatic system graphs.
- Demonstrate and perform visual inspection on lines, valves, cylinders, reservoirs and fluids.
- Discuss hydraulic and pneumatics as applied to brake, power steering, automatic transmission, engine lubrication, suspension, and fuel systems.

3. Demonstrate a working knowledge required to safely set up and use oxy-acetylene welding equipment for welding, heating & cutting.

Potential Elements of the Performance:

- Explain metallurgy and the heat treatment of metals.
- Outline the proper handling of oxygen and acetylene.
- Demonstrate the setting of pressure regulators.
- Describe the use of proper eye and body protection.
- Produce fusion and braze welding on butt, lap corner, edge and tee joints.

III. TOPICS:

COURSE NAME

COURSE NUMBER

1. Mobile air conditioning systems.
2. Hydraulics & pneumatics.
3. Oxy-acetylene cutting & welding.

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Modern Automotive Technology

Pens, pencils, calculator, 3-ring binder

*shop coat or coveralls

*CSA approved steel toe boots (high top)

*CSA approved safety glasses

*these items mandatory for shop

V. EVALUATION PROCESS/GRADING SYSTEM:

The final grade for this course will be based on the results of classroom, assignment and shop evaluations weighed as indicated:

Classroom – 60% of the final grade is comprised of term tests

Assignment – 10% of the final grade is comprised of a number of technical reports

**Shop – 30% of the final grade is comprised of attendance, punctuality, preparedness, student ability, work organization and general attitude.
(Student will be given notice of test and assignment dates in advance)**

The following semester grades will be assigned to students in postsecondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	4.00
A	80 - 89%	3.75
B	70 - 79%	3.00
C	60 - 69%	2.00
R (Repeat)	59% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field placement or non-graded subject areas.	
X	A temporary grade. This is used in limited situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see <i>Policies & Procedures Manual - Deferred Grades and Make-up</i>).	
NR	Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating circumstances, it has been impossible for the faculty member to report grades.	

VI. SPECIAL NOTES:

COURSE NAME

COURSE NUMBER

Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493, 717, or 491 so that support services can be arranged for you.

Retention of course outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the instructor. Credit for prior learning will be given upon successful completion of the following:

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.